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EXAMINER

ABEL JALIL, NEVEEN

ART UNIT	PAPER NUMBER
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2175

DATE MAILED: 07/15/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/740,540

Applicant(s)

ROBINSON ET AL.

Examiner

Neveen Abel-Jalil

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 and 34-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 and 34-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 120V POPOVICI

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

SUPERVISORY PATENT EXAMINER

TECHNOLOGY CENTER 2100

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/13/2003 has been entered.
2. The amendment filed on June 13, 2003 has been received and entered. Claims 32-33 are canceled. Claims 34-37 are added. Therefore, Claims 1-31, and 34-37 are pending

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 6, 11, 16, 21, 31, and 34-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Christiansen (U.S. Patent No. 5,915,253).

As to claim 1, Christiansen discloses a data storage system comprising:

a first volume (See figure 6, blocks 26/30/34, wherein “volume” reads on “object”) having a first storage volume characteristics (See column 12, lines 23-28, wherein “volume characteristics” reads on “object includes metadata”);

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a second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") having a second storage volume characteristics (See column 12, lines 23-28, wherein "volume characteristics" reads on "object includes metadata"); and

a computing node coupled to said first volume and said second volume (See figure 1, column 4, line 1, 9), wherein said computing node includes a file system (See figure 1, block 60) for identifying files stored by said first volume and said second volume (See figure 7, block 182);

wherein said file system (See figure 1, block 60) includes a directory structure (See column 5, lines 55-56, wherein "directory structure" reads on "index into object table", column 12, lines 16-18, also see column 13, line 33, shows ID of parent directory indicating all child directories are tied up to one umbrella directory) having a directory allocated to said first volume and said second volume, wherein said directory (See column 12, lines 23-44, wherein "said first volume and said second volume" reads on "class", also see column 13, line 33, shows ID of parent directory indicating all child directories are tied up to one umbrella directory) includes:

an entry corresponding to a file maintained by said file system (See column 5, lines 60-61, wherein "entry corresponding to file" reads on "class reference points for file class"), and wherein said entry includes a field containing a volume identifier (ID) (See column 15, table) indicative of which of said first or said second volumes said file is stored within (See column 4, lines 24-25, wherein "indicative of which of said first or said second" reads on "each object is owned by particular volume", 40-44, wherein "indicative volume" reads on "create an object of that particular class", also see, column 18, line 20-22).

As to claim 6, Christiansen discloses a file system (See figure 1, block 60) for use in a computing node (See figure 1, block 22) coupled to a first volume and a second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object"), wherein said file system is configured to identify files (See column 5, line 53) stored by said first volume and said second volume, wherein said file system (See figure 1, block 60) includes a directory structure (See column 5, lines 55-56, wherein "directory structure" reads on "index into object table", column 12, lines 16-18, also see column 13, line 33, shows ID of parent directory indicating all child directories are tied up to one umbrella directory) having a directory allocated to said first volume and said second volume, wherein said directory (See column 12, lines 23-44, wherein "said first volume and said second volume" reads on "class") includes

an entry corresponding to a file maintained by said file system (See column 5, lines 58-61), and wherein said entry includes a field containing a volume identifier (ID) indicative of which of said first or said second volumes said file is stored within (See column 15, table).

As to claim 11, Christiansen discloses a method of operating a file system (See column 4, line 14-15, "operating file system" reads on "maintaining the location of objects on storage devices") which identifies files stored by a first volume and a second volume (See figure 1, blocks 28/32/36, wherein "identifies files" reads on "PTR to file class"), said method comprising:

providing a filename corresponding to a file maintained by said file system (See column 5, lines 60-61, wherein "filename" reads on "class reference") ; and

accessing an entry (See column 9, line 47) in a directory (See column 5, lines 55-56, wherein "directory" reads on " index into object table", column 12, lines 16-18, also see column 13, line 33, shows ID of parent directory indicating all child directories are tied up to one umbrella directory) allocated to said first volume and said second volume (See column 12, lines 23-44, wherein "said first volume and said second volume" reads on "class"), wherein said entry includes a field containing a volume identifier (ID) (See column 15, table) indicative of which of said first or said second volumes said file is stored within (See column 5, line 67, and column 6, lines 1-2, wherein "indicative of which volume" reads on "unique identifier associated with object").

As to claim 16, Christiansen discloses computer readable medium (See figure 1, block 22) comprising instructions for operating a file system (See column 1, line 16) which identifies files stored by a first volume and a second volume (see figure 6, objects 26/30/34), wherein said instructions are executable by a computing node (See figure 1) to implement a method comprising:

providing a filename corresponding to a file maintained by said file system (See column 5, lines 60-61, wherein "filename" reads on "class reference"); and

accessing an entry (See column 9, line 47) in a directory (See column 5, lines 55-56, wherein "directory" reads on " index into object table", column 12, lines 16-18, also see column 13, line 33, shows ID of parent directory indicating all child directories are tied up to one umbrella directory) allocated to said first volume and said second volume (See column 12, lines 23-44, wherein "said first volume and said second volume" reads on "class"), wherein said entry

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includes a field containing a volume identifier (See column 15, table) indicative of which of said first or said second volumes said file is stored within (See figure 7, block 192).

As to claim 21, Christiansen discloses a data storage system comprising:

a first volume (See figure 6, objects 26/30/34) having a first storage volume characteristic (See column 12, lines 23-28, wherein “volume characteristics” reads on “object includes metadata”);

a second volume (See figure 6, objects 26/30/34) having a second storage volume characteristic (See column 12, lines 23-28, wherein “volume characteristics” reads on “object includes metadata”); and

a computing node (See figure 1) coupled to said first volume and said second volume, wherein said computing node (See figure 1) includes a file system (See figure 1, block 60) for identifying a first file stored on said first volume and a second file stored on said second volume (See column 4, lines 24-25, wherein “identifying a first file stored on said first volume” reads on “each object is owned by particular volume”, 40-44, wherein “indicative volume” reads on “create an object of that particular class”, also see, column 18, line 20-22);

wherein said file system includes a directory structure having a directory (See column 5, lines 55-56) which includes a first entry corresponding to said first file and a second entry corresponding to said second file (See column 12, line 18).

As to claim 31, Christiansen discloses a computer memory (See column 4, lines 31-34) containing a directory structure (See column 5, lines 55-56, wherein “directory structure” reads

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on “index into object table”, column 12, lines 16-18) maintained by a file system (See figure 7) having a first entry in a directory corresponding to a first file and a second entry in said directory corresponding to a second file (See column 5, lines 60-61, wherein “entry corresponding to file” reads on “class reference points for file class”), wherein said first file is stored on a first volume having a first set of storage characteristics and said second file is stored on a second volume having a second set of storage characteristics (See column 4, lines 20, 31-35).

As to claim 34, Christiansen discloses wherein said entry includes another field containing an index number associated with metadata corresponding to said file (See column 5, lines 52-67, a and column 6, lines 1-27).

As to claim 35, Christiansen discloses wherein said first volume and said second volume each specify a set of methods for manipulating said metadata and for allocating data blocks (See column 4, lines 23-50).

As to claim 36, Christiansen discloses wherein said entry includes another field containing an index number associated with metadata corresponding to said file (See column 5, lines 52-67, a and column 6, lines 1-27).

As to claim 37, Christiansen discloses wherein said first volume and said second volume each specify a set of methods for manipulating said metadata and for allocating data blocks (See column 4, lines 23-50).



*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-5, 7-10, 12-15, 17-20, and 22-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christiansen (U.S. Patent No. 5,915,253) in view of Napolitano et al. (U.S. Patent No. 6,219,693).

As to claim 2, Christiansen discloses the file system (See figure 1, block 60) receiving from a software application (See column 2, line 58-59).

Christiansen does not teach is configured to allocate space on said first volume in response to receiving a request specifying said first storage volume characteristic and said second volume in response to receiving a request specifying said second storage volume characteristic.

Napolitano et al. teaches wherein said method further comprises allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic (See column 16, lines 13-35, and column 15, lines 56-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen to include wherein said method further

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comprises allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen by the teaching of Napolitano et al. to include wherein said method further comprises allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic because attaching volume identifier and specific characteristics allows for distinction in storage and management of the file system and volume allowing for efficient data storage and retrieval.

As to claim 3, Christiansen as modified discloses each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") comprises a single storage device (See figure 6).

As to claim 4, Christiansen as modified discloses each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") comprises a multiple storage device system (See figure 1, column 4, lines 13-14).

As to claims 5, 10, 15, 20, 25, and 30, although Christiansen teaches positioning the stored data in predetermined slots of a function pointer array (See column 9, lines 43-45)

Christiansen does not teach wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

Napolitano et al. teaches wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system (See column 2, lines 24, 30).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen to include wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen by the teaching of Napolitano et al. to include wherein said multiple storage device system is a redundant array of inexpensive disks (RAID) storage system because the use of redundant array of inexpensive disks in storage systems provides more robust disk storage architecture in multiple device storage systems by utilizing all available space, making them highly efficient.

As to claim 7, Christiansen discloses the file system (See figure 1, block 60) receiving from a software application (See column 2, lines 58-60).

Christiansen does not teach configured to allocate space on said first volume in response to receiving a request specifying a first storage volume characteristics and said second volume in response to receiving a request specifying a second storage volume characteristic.

Napolitano et al. teaches configured to allocate space on said first volume in response to receiving a request specifying a first storage volume characteristics and said second volume in

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response to receiving a request specifying a second storage volume characteristic (See column 16, lines 13-35, and column 15, lines 56-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen to include configured to allocate space on said first volume in response to receiving a request specifying a first storage volume characteristics and said second volume in response to receiving a request specifying a second storage volume characteristic.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen by the teaching of Napolitano et al. to include configured to allocate space on said first volume in response to receiving a request specifying a first storage volume characteristics and said second volume in response to receiving a request specifying a second storage volume characteristic because attaching volume identifier and specific characteristics allows for distinction in storage and management of the file system and volume allowing for efficient data storage and retrieval.

As to claim 8, Christiansen as modified discloses the file system (See figure 1, block 60) as recited in claim 7, wherein each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") comprises a single storage device (See figure 6).

As to claim 9, Christiansen as modified discloses the file system (See figure 1, block 60) as recited in claim 8, wherein each of said first volume and said second volume (See figure 6,

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blocks 26/30/34, wherein "volume" reads on "object") comprises a multiple storage device system (See figure 1, column 4, lines 13-14).

As to claim 12, Christiansen discloses from a software application (See column 2, lines 58-60).

Christiansen does not teach allocating space on said first volume in response to receiving a request specifying a first storage volume characteristics and said second volume in response to receiving a request specifying a second storage volume characteristic.

Napolitano et al. teaches allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic (See column 16, lines 13-35, and column 15, lines 56-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen to include allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen by the teaching of Napolitano et al. include allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic because attaching volume identifier and specific characteristics

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allows for distinction in storage and management of the file system and volume allowing for efficient data storage and retrieval.

As to claim 13, Christiansen as modified discloses each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein “volume” reads on “object”) comprises a single storage device (See figure 6).

As to claims 14, and 29, Christiansen as modified still does not teach said first volume and said second volume are each a logical volume, wherein said each logical volume comprises a multiple storage device system.

Napolitano et al. teaches said first volume and said second volume are each a logical volume (See column 1, lines 15-17, column 8, lines 10-12), wherein said each logical volume comprises a multiple storage device system (See figure 10A).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have further modified Christiansen as modified to include said first volume and said second volume are each a logical volume, wherein said each logical volume comprises a multiple storage device system.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have further modified Christiansen as modified by the teaching of Napolitano et al. to include said first volume and said second volume are each a logical volume, wherein said each logical volume comprises a multiple storage device system because the use of logical volume space in storage systems provides more robust disk storage architecture in multiple device

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storage systems by utilizing all available space reducing physical space utilization, making computer physical storage units highly efficient.

As to claim 17, Christiansen discloses the computer readable medium (See figure 1, block 22) receiving requests from a software application (See column 2, lines 58-59).

Christiansen does not teach allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic.

Napolitano et al. teaches allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic (See column 16, lines 13-35, and column 15, lines 56-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen to include allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen by the teaching of Napolitano et al. include allocating space on said first volume in response to receiving a request specifying a first storage volume characteristic, and said second volume in response to receiving a request specifying a second storage volume characteristic because attaching volume identifier and specific characteristics

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allows for distinction in storage and management of the file system and volume allowing for efficient data storage and retrieval.

As to claim 18, Christiansen as modified discloses the computer readable medium (See figure 1, block 22) as recited in claim 17, wherein each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") comprises a single storage device (See figure 6).

As to claim 19, Christiansen as modified discloses the computer readable medium (See figure 1, block 22) as recited in claim 17, wherein each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") comprises a multiple storage device system (See figure 1, column 4, lines 13-14).

As to claim 22, Christiansen discloses from a software application (See column 2, lines 58-60).

Christiansen does not teach the file system is configured to allocate space on said first volume in response to receiving a request specifying said first storage volume characteristic and said second volume in response to receiving a request specifying said second storage volume characteristic.

Napolitano et al. teaches the file system is configured to allocate space on said first volume in response to receiving a request specifying said first storage volume characteristic and



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said second volume in response to receiving a request specifying said second storage volume characteristic (See column 16, lines 13-35, and column 15, lines 56-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen to include the file system is configured to allocate space on said first volume in response to receiving a request specifying said first storage volume characteristic and said second volume in response to receiving a request specifying said second storage volume characteristic.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen by the teaching of Napolitano et al. to include the file system is configured to allocate space on said first volume in response to receiving a request specifying said first storage volume characteristic and said second volume in response to receiving a request specifying said second storage volume characteristic because attaching volume identifier and specific characteristics allows for distinction in storage and management of the file system and volume allowing for efficient data storage and retrieval.

As to claim 23, Christiansen as modified discloses each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") comprises a single storage device (See figure 6).

As to claim 24, Christiansen as modified discloses each of said first volume and said second volume (See figure 6, blocks 26/30/34, wherein "volume" reads on "object") comprises a multiple storage device system (See figure 1, column 4, lines 13-14).

As to claim 26, Christiansen discloses a method comprising:

storing a first file on a first volume having a first storage volume characteristic (See column 12, lines 23-28, wherein “volume characteristics” reads on “object includes metadata”) based on a first set of storage characteristics desired for said first file (See column 8, lines 6-7, wherein “characteristics” reads on “plurality of class methods”), wherein said first file is located in a directory of a directory structure maintained by a file system (See figure 7).

Christiansen does not teach storing a second file on a second volume having a second storage volume characteristic based on a second set of storage characteristics desired for said second file, wherein said second file is located in said directory.

Napolitano et al. teaches storing a second file on a second volume having a second storage volume characteristic based on a second set of storage characteristics desired for said second file, wherein said second file is located in said directory (See column 16, lines 13-35, and column 15, lines 56-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen to include storing a second file on a second volume having a second storage volume characteristic based on a second set of storage characteristics desired for said second file, wherein said second file is located in said directory.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to have modified Christiansen by the teaching of Napolitano et al. to include storing a second file on a second volume having a second storage volume characteristic based on a second set of storage characteristics desired for said second file, wherein said second file is located in

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said directory because attaching volume identifier and specific characteristics allows for distinction in storage and management of the file system and volume allowing for efficient data storage and retrieval.

As to claim 27, Christiansen as modified discloses comprises allocating space on said first volume in response to receiving a request specifying said first storage volume characteristic (See Napolitano et al. column 16, lines 13-35, and column 15, lines 56-67) and said second volume (See column 4, lines 23-26) in response to receiving a request specifying said second storage volume characteristic from a software application (See column 2, lines 58-60).

As to claim 28, Christiansen as modified discloses each of said first volume and said second volume comprises (See figure 6, blocks 26/30/34, wherein “volume” reads on “object”) a single storage device (See figure 6).

#### ***Response to Arguments***

7. Applicant's arguments filed June 13, 2003 have been fully considered but they are not persuasive.

Applicant's argument that “Christiansen does not teach or disclose wherein said file system includes a directory structure having a directory allocated to said first volume and said second volume, wherein said includes an entry corresponding to a file maintained by said file system, and wherein said entry includes a field containing a volume identifier (ID) indicative of

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which of said first or said second volumes said file is stored within” is respectfully acknowledged but is not deemed persuasive.

The Examiner respectfully disagrees pointing to above-mentioned rejection where Christiansen shows in background of the invention column 1, lines 15-20, that a conventional file system maintains the location of the data on storage devices. Christiansen discloses a directory (See column 12, lines 10-22) has a pointer, which references an object that can be a representation of a file or any other conventional entities (See Christiansen bases a file system (Storage system) column 4, lines 12-26). An entry to a volume ID indexed and organized to access a file system is taught by Christiansen indicating a distinction to the volume allocation specially when combined in an object class (See column 12, lines 8-44).

The combination of Christiansen and Napolitano et al. shows more than one volume (See Napolitano et al. figure 10A, disk 1, and disk 2, also see Napolitano et al. column 16, lines 13-21) being referenced and by a volume ID (See Christiansen figure 7, an ID to a particular distinguished volume class).

Applicant’s argument that “Napolitano et al. does not have a reference to a directory structure having an entry corresponding to a file maintained by said file system, and wherein said entry includes a field containing a volume identifier indicative of which of said first or said second volumes said file is stored within”.

The Examiner respectfully disagrees pointing to above-mentioned rejection where Christiansen shows a file system, a file object being stored on a volume referenced by a directory. Napolitano et al. is introduced a combination reference to disclose RAID system. Generally stated a hierarchical (See column 8, lines 22-33) storage system containing a file array (See column 3, lines 60-66) has a method of sustaining the organization within the structure (See column 4, lines 10-15).

Examiner respectfully points to Napolitano et al. (column 16, lines 13-35, and column 15, lines 56-67) where he teaches the management and design of the file system of the RAID, wherein a directory must exist. Since the definition of the file system according to Microsoft Press <sup>TM</sup>© Computer Dictionary 3<sup>rd</sup> addition, 1997, pg. 196: A file system consists of files, directories, and the information needed to locate and access these items.

Therefore, Napolitano et al. does teach a directory structure and allocation to one logical partition or the other designated as a virtual volume.

### ***Conclusion***


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neveen Abel-Jalil whose telephone number is 703-305-8114. The examiner can normally be reached on 8:00AM-4: 30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici can be reached on 703-305-3830. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7240 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Neveen Abel-Jalil  
July 10, 2003



DOV POPOVICI  
SUPERVISORY PATENT EXAMINER  
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